

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for connecting a plurality of remote applications with a data source, the method comprising:

providing at least one interface module configured to interface with at least one of the remote applications;

providing at least one port module configured to interface between the interface module and the data source;

providing a connection manager to facilitate the interface between the interface module and the port module; and

establishing a direct connection between the interface module and the port module for communicating independently from the connection manager in subsequent communications.

2. (Original) The method of claim 1, further comprising initializing the connection manager.

3. (Original) The method of claim 1, further comprising establishing a connection between the connection manager and the port module.

4. (Previously Presented) The method of claim 1, further comprising returning a port module identifier for the port module to the interface module before directly connecting the interface module and the port module, if the port module is available.

5. (Original) The method of claim 1, further comprising authorizing a connection between the interface module and the connection manager.

6. (Original) The method of claim 1, further comprising authorizing a connection between the port module and the connection manager.

7. (Previously Presented) The method of claim 4, wherein a plurality of port modules are provided, and returning a port module identifier for an available port further comprises:

determining which of the plurality of port modules are associated with the data source and storing a data source identifier in a first data structure;

identifying each of the plurality of port modules by a port module identifier and storing the port module identifier in a second data structure; and

determining the availability for each of the plurality of port modules and storing an availability status of each of the plurality of port modules in a third data structure.

8. (Previously Presented) The method of claim 7, wherein each of the first, second and third data structures are arrays.

9. (Original) The method of claim 7, further comprising, storing the port module identifier for each available port module in a queue.

10. (Previously Presented) The method of claim 1, further comprising retrieving data from the data source responsive to a command from the remote application.

11. (Original) The method of claim 9, wherein the queue is a first-in-first-out array.

12. (Original) The method of claim 9, wherein the port module identifier for a port module that is no longer available is removed from the queue.

13. (Previously Presented) The method of claim 9, further comprising returning the first port module identifier placed in the queue to the connection manager.

14. (Previously Presented) The method of claim, 10 further comprising converting the command to a structured query language format to support interfacing with the data source.

15. (Previously Presented) The method of claim 1, further comprising inserting data into an HTML format to support interfacing between the remote application and the data source.

16. (Previously Presented) The method of claim 1, further comprising:

providing a second interface module configured to interface with a second one of the plurality of remote applications;

providing a second port module configured to interface between the second interface module and the data source and to pass a query command from the second interface module to the data source, and a query result from the data source to the second interface module;

providing a connection manager to facilitate the interface between the second interface module and the second port module; and

establishing a direct connection between the second interface module and the second port module.

17. (Previously Presented) The method of claim 1, further comprising disconnecting the remote application from the interface module after the interface module passes a query result to the remote application.

18. (Currently Amended) A computer readable medium having stored thereon computer executable instructions for performing a method for connecting a plurality of remote applications with a data source, the method comprising:

providing at least one interface module configured to interface with at least one of the remote applications;

providing at least one port module configured to interface between the interface module and the data source;

providing a connection manager to facilitate the interface between the interface module and the port module; and

establishing a direct connection between the interface module and the port module for communicating independently from the connection manager in subsequent communications.

19. (Original) The computer readable medium of claim 18, wherein the method further comprises initializing the connection manager.

20. (Original) The computer readable medium of claim 18, wherein the method further comprises authorizing a connection between the interface module and the connection manager.

21. (Original) The computer readable medium of claim 18, wherein the method further comprises authorizing a connection between the port module and the connection manager.

22. (Original) The computer readable medium of claim 18, wherein the method further comprises establishing a connection between the connection manager and the port module.

23. (Currently Amended) The computer readable medium of claim 18, wherein the method further ~~comprising~~ comprises returning a port module identifier for the port module to the interface module before directly connecting the interface module and the port module, if the port module is available.

24. (Previously Presented) The computer readable medium of claim 23, wherein a plurality of port modules are provided, and returning a port module identifier for an available port further comprises:

determining which of the plurality of port modules are associated with the data source and storing a data source identifier in a first data structure;

identifying each of the plurality of port modules by a port module identifier and storing the port module identifier in a second data structure; and

determining the availability of each of the plurality of port modules and storing an availability status for each of the plurality of port modules in a third data structure.

25. (Previously Presented) The computer readable medium of claim 24, wherein each of the first, second and third data structures are arrays.

26. (Original) The computer readable medium of claim 24, wherein the method further comprises, storing the port module identifier for each available port module in a queue.

27. (Original) The computer readable medium of claim 26, wherein the queue is a first-in-first-out array.

28. (Original) The computer readable medium of claim 26, wherein the port module identifier for a port module that is no longer available is removed from the queue.

29. (Previously Presented) The computer readable medium of claim 26, further comprising returning the first port module identifier placed in the queue to the connection manager.

30. (Previously Presented) The computer readable medium of claim 18, wherein the method further comprises retrieving data from the data source responsive to a command from the remote application.

31. (Previously Presented) The computer readable medium of claim 30, wherein the method further comprises converting the command to a structured query language format to support interfacing with the data source.

32. (Previously Presented) The computer readable medium of claim 18, wherein the method further comprises inserting data into an HTML format to support interfacing between the remote application and the data source.

33. (Previously Presented) The computer readable medium of claim 18, wherein the method further comprises:

providing a second interface module configured to interface with a second one of the plurality of remote applications;

providing a second port module configured to interface between the second interface module and the data source and to pass a query command from the second interface module to the data source, and a query result from the data source to the second interface module;

providing a connection manager to facilitate the interface between the second interface module and the second port module; and

establishing a direct connection between the second interface module and the second port module.

34. (Previously Presented) The computer readable medium of claim 18, wherein the method further comprises disconnecting the remote application from the interface module after the interface module passes a query result to the remote application.

35. (Currently Amended) A system for connecting a plurality of remote applications with a data source, the system comprising:

an interface module configured to interface with at least one of the remote applications;

a port module configured to interface between the interface module and the data source;

and

a connection manager module configured to facilitate a direct interface between the interface module and the port module for communicating independently from the connection manager in subsequent communications.

36. (Original) The system of claim 35, further configured to initialize the connection manager.

37. (Original) The system of claim 35, wherein the connection manager is configured to authorize the interface between the interface module and the connection manager.

38. (Original) The system of claim 35, wherein the connection manager is configured to authorize the interface between the port module and the connection manager.

39. (Original) The system of claim 35, wherein the method further comprises establishing a connection between the connection manager and the port module.

40. (Original) The system of claim 35, wherein the connection manager establishes a connection between the connection manager and the port module.

41. (Original) The system of claim 40, wherein the port module is programmed to report its availability to the connection manager.

42. (Previously Presented) The system of claim 35, wherein the connection manger is configured to return a port module identifier for the port module to the interface module before directly connecting the interface module and the port module, if the port module is available.

43. (Original) The system of claim 35, further comprising a data structure for storing which port modules are associated with each data source.

44. (Original) The system of claim 35, further comprising a data structure for storing a port module identifier identifying each port module.

45. (Original) The system of claim 44, wherein the data structure is an array.

46. (Original) The system of claim 35, further comprising a data structure for storing an availability status for each port module that is available for establishing a connection to the data source.

47. (Original) The system of claim 46, wherein the data structure is an array.

48. (Previously Presented) The system of claim 35, wherein the interface module is configured to support HTML and provide interfacing between the remote application and the data source.

49. (Previously Presented) The system of claim 35, wherein the interface module is configured to convert a command from the remote application to a structured query language format to support interfacing with the data source.

50. (Previously Presented) The method of claim 1, wherein the port module is also configured to pass a query command from the interface module to the data source, and a query result from the data source to the interface module.

51. (Previously Presented) The method of claim 1, wherein a plurality of interface modules and a plurality of port modules are provided; and selected ones of the interface modules and port modules are individually directly connected so as to operate independently of each other and the connection manager.

52. (Previously Presented) The method of claim 1, wherein the interface module converts query requests and results between SQL and HTML.

53. (Previously Presented) The method of claim 1, wherein the remote application is a web browser.

54. (Previously Presented) The method of claim 1, wherein the port module, connection manager and interface module are separate portions of executable code.

55. (Previously Presented) The method of claim 1, wherein the port module, connection manager and interface module communicate with each other via TCP/IP.

56. (Previously Presented) The computer readable medium of claim 18, wherein the port module is also configured to pass a query command from the interface module to the data source, and a query result from the data source to the interface module.

57. (Previously Presented) The computer readable medium of claim 18, wherein a plurality of interface modules and a plurality of port modules are provided; and selected ones of the interface modules and port modules are individually directly connected so as to operate independently of each other and the connection manager.

58. (Previously Presented) The computer readable medium of claim 18, wherein the interface module converts query requests and results between SQL and HTML.

59. (Previously Presented) The computer readable medium of claim 18, wherein the remote application is a web browser.

60. (Previously Presented) The computer readable medium of claim 18, wherein the port module, connection manager and interface module are separate portions of executable code.

61. (Previously Presented) The computer readable medium of claim 18, wherein the port module, connection manager and interface module communicate with each other via TCP/IP.

62. (Previously Presented) The system of claim 35, wherein the port module is also configured to pass a query command from the interface module to the data source, and a query result from the data source to the interface module.

63. (Previously Presented) The system of claim 35, wherein a plurality of interface modules and a plurality of port modules are provided; and selected ones of the interface modules and port modules are individually directly connected so as to operate independently of each other and the connection manager.

64. (Previously Presented) The system of claim 35, wherein the interface module converts query requests and results between SQL and HTML.

65. (Previously Presented) The system of claim 35, wherein the remote application is a web browser.

66. (Previously Presented) The system of claim 35, wherein the port module, connection manager and interface module are separate portions of executable code.

67. (Previously Presented) The system of claim 35, wherein the port module, connection manager and interface module communicate with each other via TCP/IP.

68. (Previously Presented) A method for connecting a plurality of remote applications with a data source, the method comprising:

providing a plurality of interface modules configured to individually interface with respective ones of the plurality of remote applications;

providing a plurality of port modules configured to individually interface between respective ones of the interface modules and the data source;

providing a connection manager that facilitates a direct connection between respective ones of the plurality of interface modules and the plurality of port modules, for communicating independently from the connection manager in subsequent communications, by indicating to a first one of the plurality of interface modules that a first one of the plurality of port modules is available.

69. (Previously Presented) The method of claim 68, wherein the direct connection is independent of the connection manager.

70. (Previously Presented) The method of claim 68, wherein the first one of the plurality of port modules is configured to pass a query command from the first one of the interface modules to the data source, and a query result from the data source to the first one of the interface modules.

71. (Previously Presented) A computer readable medium having stored thereon computer executable instructions for performing a method for connecting a plurality of remote applications with a data source, the method comprising:

providing a plurality of interface modules configured to individually interface with respective ones of the plurality of remote applications;

providing a plurality of port modules configured to individually interface between respective ones of the interface modules and the data source;

providing a connection manager that facilitates a direct connection between respective ones of the plurality of interface modules and the plurality of port modules, for communicating independently from the connection manager in subsequent communications, by indicating to a first one of the plurality of interface modules that a first one of the plurality of port modules is available.

72. (Previously Presented) The computer readable medium of claim 71, wherein the direct connection is independent of the connection manager.

73. (Previously Presented) The computer readable medium of claim 71, wherein the first one of the plurality of port modules is configured to pass a query command from the first one of the interface modules to the data source, and a query result from the data source to the first one of the interface modules.

74. (Previously Presented) A system for connecting a plurality of remote applications with a data source, the system comprising:

a plurality of interface modules configured to individually interface with respective ones of the plurality of remote applications;

a plurality of port modules configured to individually interface between respective ones of the interface modules and the data source;

a connection manager module configured to facilitate a direct connection between respective ones of the plurality of interface modules and the plurality of port modules, for communicating independently from the connection manager in subsequent communications, by indicating to a first one of the plurality of interface modules that a first one of the plurality of port modules is available.

75. (Previously Presented) The system of claim 74, wherein the direct connection is independent of the connection manager module.

76. (Previously Presented) The system of claim 74, wherein the first one of the plurality of port modules is configured to pass a query command from the first one of the interface modules to the data source, and a query result from the data source to the first one of the interface modules.